

Claims:

1. A method of operating a base station to wirelessly transmit data communications to a plurality of user terminals on a carrier, the method comprising:

repeatedly and sequentially wirelessly transmitting time division multiplexed slots to the plurality of user terminals on the carrier, wherein at least one of the time division multiplied slots carries data/control intended for the plurality of user terminals, and wherein the time division multiplexed slots each include a preamble;

wherein the preamble includes an indication of the data rate of the data/control carried by the time division multiplexed slots; and

wherein the preamble includes a plurality of a user identifiers that identify the plurality of user terminals.

2. The method of claim 1, wherein Walsh functions are employed as the plurality of user identifiers.

3. The method of claim 2, wherein:
a first plurality of Walsh functions is modulated on an in-phase portion of the carrier to identify a first plurality of user terminals; and

a second plurality of Walsh functions is modulated on a quadrature portion of the carrier to identify a second plurality of user terminals.

4. The method of claim 3, wherein the indication of the data rate comprises an (8,4,4) code that is modulated on the quadrature portion of the carrier.

5. The method of claim 3, wherein:

the first plurality of Walsh functions are modulated on the in-phase portion of the carrier in a time division manner; and

the second plurality of Walsh functions are modulated on the quadrature portion of the carrier in a time division manner.

6. The method of claim 3, wherein:

the first plurality of Walsh functions are concurrently modulated on the in-phase portion of the carrier; and

the second plurality of Walsh functions are concurrently modulated on the quadrature portion of the carrier.

7. The method of claim 1, wherein the data/control is contained in a plurality of segments of the slot.

8. The method of claim 7, wherein the slot further carries a pilot channel and a Medium Access Control (MAC) channel.

9. The method of claim 1, wherein the slot further carries a pilot channel and a Medium Access Control (MAC) channel.

10. The method of claim 9, wherein Walsh functions are employed as the plurality of user identifiers.

11. A time division multiplexed slot embodied on a carrier that carries data intended for a plurality of user terminals, the slot comprising:

3 a preamble that includes an indication of a data rate of data carried by the time
4 division multiplexed slot and that includes a plurality user identifiers that identify the
5 plurality of user terminals;

6 at least one data segment that carries the data;

7 at least one pilot signal segment; and

8 at least one Medium Access Control (MAC) segment.

1 12. The time division multiplexed slot of claim 11, wherein Walsh functions are
2 employed in the preamble as the plurality of user identifiers.

1 13. The time division multiplexed slot of claim 12, wherein:
2 a first plurality of Walsh functions is modulated on an in-phase portion of the carrier
3 during the preamble to identify a first plurality of user terminals; and
4 a second plurality of Walsh functions is modulated on a quadrature portion of the
5 carrier during the preamble to identify a second plurality of user terminals.

1 14. The time division multiplexed slot of claim 13, wherein the indication of the
2 data rate comprises an (8,4,4) code that is modulated on the quadrature portion of the
3 carrier.

1 15. The time division multiplexed slot of claim 13, wherein:
2 the first plurality of Walsh functions are modulated on the in-phase portion of the
3 carrier during the preamble in a time division manner; and
4 the second plurality of Walsh functions are modulated on the quadrature portion of
5 the carrier during the preamble in a time division manner.

1 16. The time division multiplexed slot of claim 13, wherein:
2 the first plurality of Walsh functions are concurrently modulated on the in-phase
3 portion of the carrier; and
4 the second plurality of Walsh functions are concurrently modulated on the
5 quadrature portion of the carrier.

1 17. The time division multiplexed slot of claim 11, wherein the data is contained
2 in a plurality of segments of the slot.

1 18. The time division multiplexed slot of claim 17, wherein the slot further
2 carries a pilot channel and a Medium Access Control (MAC) channel.

1 19. The time division multiplexed slot of claim 11, wherein the slot further
2 carries a pilot channel and a Medium Access Control (MAC) channel.

1 20. The time division multiplexed slot of claim 19, wherein Walsh functions are
2 employed as the plurality of user identifiers.